

## WE CLAIM:

1. A polypeptide comprising more than one S3 peptides.
2. The polypeptide of claim 1 wherein the S3 peptides  
5 are in tandem repeat.
3. The polypeptide of claim 1 or 2 comprising 2 to 10 S3 peptides.
4. The polypeptide of claim 1 or 2 comprising two S3 peptides.
- 10 5. The polypeptide of claim 1 or 2 comprising three S3 peptides.
6. The polypeptide of claim 1 or 2 comprising four S3 peptides.
7. The polypeptide of claim 1 or 2 comprising eight  
15 S3 peptides.
8. The polypeptide of any one of claims 1-7 wherein at least two of the S3 peptides are separated by a linking sequence.
9. The polypeptide of claim 8 wherein at least one of  
20 the linking sequence is cleavable by protease.
10. The polypeptide of claim 8 wherein at least one of the linking sequence is cleavable by acid digestion.
11. The polypeptide of claim 10 wherein the at least one linking sequence comprises Asp-Pro.
- 25 12. The polypeptide of any one of claims 1-7 consisting of the S3 peptides.

13. The polypeptide of claim 6 which is rS3-4mer (SEQ ID NO:9).

14. The polypeptide of any one of claims 1-13 tagged with a detectable label.

5 15. S3 peptide tagged with a detectable label.

16. The polypeptide of claim 14 or the peptide of claim 15 wherein the label is detectable by fluorescence.

17. DNA encoding the polypeptide of any one of claims 1-13.

10 18. An expression cassette comprising the DNA of claim 17.

19. A vector comprising the expression cassette of claim 18.

20. A host cell comprising the DNA of claim 17.

15 21. A method of producing a multimer of S3 peptide, comprising the step of expressing DNA encoding the polypeptide of any one of claims 1-13 in a host cell.

22. The method of claim 21 further comprising the step of isolating the polypeptide.

20 23. A method of producing a polypeptide having a desired number of S3 peptides, comprising the step of expressing in a host cell DNA encoding a polypeptide which comprises S3 peptides in greater number than the desired number, and wherein at least two of the S3 peptides are separated by a cleavable linking sequence; and subjecting the polypeptide to conditions suitable for cleaving the linking sequence to produce the polypeptide having the

desired number of S3 peptides while keeping the S3 peptides intact.

24. The method of claim 23 further comprising the step of isolating the polypeptide having the desired number of S3 peptides.

25. The method of claim 23 or 24 wherein the conditions suitable for cleaving the linking sequence is acid digestion.

26. The method of claim 23 or 24 wherein the conditions suitable for cleaving the linking sequence comprises proteolytic digestion.

27. The method of any one of claims 23-26 wherein the desired number of S3 peptides is four; wherein the polypeptide encoded by the DNA comprises eight S3 peptides; and wherein the cleavable linking sequence occurs between the fourth and fifth S3 peptides in the polypeptide encoded by the DNA.

28. A method for detecting LPS-containing bacteria comprising the steps of contacting a sample to be tested for LPS-containing bacteria, with the polypeptide of any one of claims 1-13 and detecting binding between LPS and the polypeptide.

29. A method for treating endotoxaemia or sepsis comprising the step of administering the polypeptide of any one of claims 1-13 to a patient suffering from endotoxaemia or sepsis.

30. A method for detecting LPS-containing bacteria comprising the step of contacting a sample to be tested for

LPS-containing bacteria with the peptide of claim 15, and detecting binding between LPS and the peptide.

31. A method for detecting LPS-containing bacteria comprising the step of contacting a sample containing LPS-containing bacteria with the polypeptide or peptide of claim 16, and detecting bacteria-associated fluorescence arising from the label.

32. The polypeptide of any one of claims 1-14 immobilized on a solid medium.

10 33. The peptide of claim 15 immobilized on a solid medium.

34. The polypeptide of claim 32 or the peptide of claim 33 wherein the solid medium is agarose.

35. A method for removing LPS or LPS-containing bacteria from a sample, comprising the step of contacting the sample with the polypeptide or peptide of any one of claims 32-34 under conditions which allow binding of LPS-containing bacteria to the polypeptide or the peptide, and obtaining the unbound material which is substantially free of LPS or LPS-containing bacteria.

36. A commercial package comprising the polypeptide of any one of claims 1-13 and instructions for its use in detecting LPS-containing bacteria in a sample.

37. A commercial package comprising the polypeptide of any one of claims 1-13 and instructions for its use in treating endotoxaemia or sepsis.

38. A commercial package comprising the polypeptide or peptide of any one of claims 32-34 and instructions for its

54

use for removing LPS or LPS-containing bacteria from a sample.